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RAW SEQUENCE LISTING

DATE: 10/02/2002

PATENT APPLICATION: US/10/074,754

TIME: 09:45:54

Input Set : A:\96886-L.seq.txt

Output Set: N:\CRF4\10022002\J074754.raw

3 <110> APPLICANT: Marks, Daniel L.
 4 Cone, Roger D.
 6 <120> TITLE OF INVENTION: Methods and Reagents for Discovering and Using
 7 Mammalian Melanocortin Receptor Antagonists to Treat
 8 Cachexia
 10 <130> FILE REFERENCE: 96-886
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/074,754
 C--> 13 <141> CURRENT FILING DATE: 2002-02-13
 15 <160> NUMBER OF SEQ ID NOS: 10
 17 <170> SOFTWARE: PatentIn Ver. 2.0
 19 <210> SEQ ID NO: 1
 20 <211> LENGTH: 1671
 21 <212> TYPE: DNA
 22 <213> ORGANISM: Homo sapiens
 24 <220> FEATURE:
 25 <221> NAME/KEY: CDS
 26 <222> LOCATION: (394)..(1389)
 28 <400> SEQUENCE: 1
 29 agcttccgag aggcagccga tgtgagcatg tgcgcacaga ttctgtctccc aatggcatgg 60
 31 cagcttcaag gaaaattatt ttgaacagac ttgaatgcat aagattaaag ttaaagcaga 120
 33 agtgagaaca agaaagcaaa gagcagactc tttcaactga gaatgaatat tttgaagccc 180
 35 aagattttta cgtgatgatg attagagtcg tacctaaaag agactaaaaa ctocatgtca 240
 37 agctctggac ttgtgacatt tactcacagc aggcattggca attttagcct cacaactttc 300
 39 agacagataa agacttggag gaaataactg agacgactcc ctgaccaggg aggttaaattc 360
 41 aattcagggg gacactggaa ttctcctgcc agc atg gtg aac tcc acc cac cgt 414
 42 Met Val Asn Ser Thr His Arg
 43 1 5
 45 ggg atg cac act tct ctg cac ctc tgg aac cgc agc agt tac aga ctg 462
 46 Gly Met His Thr Ser Leu His Leu Trp Asn Arg Ser Ser Tyr Arg Leu
 47 10 15 20
 49 cac agc aat gcc agt gag tcc ctt gga aaa ggc tac tct gat gga ggg 510
 50 His Ser Asn Ala Ser Glu Ser Leu Gly Lys Gly Tyr Ser Asp Gly Gly
 51 25 30 35
 53 tgc tac gcg caa ctt ttt gtc tct cct gag gtg ttt gtg act ctg ggt 558
 54 Cys Tyr Ala Gln Leu Phe Val Ser Pro Glu Val Phe Val Thr Leu Gly
 55 40 45 50 55
 57 gtg atc agc ttg ttg gag aat atc tta gag att gtg gca ata gcc aag 606
 58 Val Ile Ser Leu Leu Glu Asn Ile Leu Glu Ile Val Ala Ile Ala Lys
 59 60 65 70
 61 aac aag aat ctg cat tca ccc atg tac ttt ttc atc tgc agc ttg gct 654
 62 Asn Lys Asn Leu His Ser Pro Met Tyr Phe Phe Ile Cys Ser Leu Ala
 63 75 80 85
 65 gtg gct gat atg ctg gtg agc gtt tca aat gga tca gaa acc att atc 702

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Input Set : A:\96886-L.seq.txt

Output Set: N:\CRF4\10022002\J074754.raw

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66 Val Ala Asp Met Leu Val Ser Val Ser Asn Gly Ser Glu Thr Ile Ile
67          90          95          100
69 atc acc cta tta aac cgt aca gat acg gat gca cag agt ttc aca gtg 750
70 Ile Thr Leu Leu Asn Arg Thr Asp Thr Asp Ala Gln Ser Phe Thr Val
71      105      110      115
73 aat att gat aat gtc att gac tcg gtg atc tgt agc tcc ttg ctt gca 798
74 Asn Ile Asp Asn Val Ile Asp Ser Val Ile Cys Ser Ser Leu Leu Ala
75 120      125      130      135
77 tcc att tgc agc ctg ctt tca att gca gtg gac agg tac ttt act atc 846
78 Ser Ile Cys Ser Leu Leu Ser Ile Ala Val Asp Arg Tyr Phe Thr Ile
79          140          145          150
81 ttc tat gct ctc cag tac cat aac att atg aca gtt aag cgg gtt ggg 894
82 Phe Tyr Ala Leu Gln Tyr His Asn Ile Met Thr Val Lys Arg Val Gly
83          155          160          165
85 atc agc ata agt tgt atc tgg gca gct tgc acg gtt tca ggt att ttg 942
86 Ile Ser Ile Ser Cys Ile Trp Ala Ala Cys Thr Val Ser Gly Ile Leu
87      170      175      180
89 ttc atc att tac tca gat agt agt gct gtc atc atc tgc ctc atc acc 990
90 Phe Ile Ile Tyr Ser Asp Ser Ser Ala Val Ile Ile Cys Leu Ile Thr
91      185      190      195
93 atg ttc ttc acc atg ctg gct ctc atg gct tct ctc tat gtc cac ctg 1038
94 Met Phe Phe Thr Met Leu Ala Leu Met Ala Ser Leu Tyr Val His Leu
95 200      205      210      215
97 ttc ctg atg gcc agg ctt cac att aag agg att gct gtc ctc ccc ggc 1086
98 Phe Leu Met Ala Arg Leu His Ile Lys Arg Ile Ala Val Leu Pro Gly
99          220          225          230
101 act ggt gcc atc cgc caa ggt gcc aat atg aag gga gcg att acc ttg 1134
102 Thr Gly Ala Ile Arg Gln Gly Ala Asn Met Lys Gly Ala Ile Thr Leu
103          235          240          245
105 acc atc ctg att ggc gtc ttt gtt gtc tgc tgg gcc cca ttc ttc ctc 1182
106 Thr Ile Leu Ile Gly Val Phe Val Val Cys Trp Ala Pro Phe Phe Leu
107      250      255      260
109 cac tta ata ttc tac atc tct tgt cct cag aat cca tat tgt gtg tgc 1230
110 His Leu Ile Phe Tyr Ile Ser Cys Pro Gln Asn Pro Tyr Cys Val Cys
111      265      270      275
113 ttc atg tct cac ttt aac ttg tat ctc ata ctg atc atg tgt aat tca 1278
114 Phe Met Ser His Phe Asn Leu Tyr Leu Ile Leu Ile Met Cys Asn Ser
115 280      285      290      295
117 atc atc gat cct ctg att tat gca ctc cgg agt caa gaa ctg agg aaa 1326
118 Ile Ile Asp Pro Leu Ile Tyr Ala Leu Arg Ser Gln Glu Leu Arg Lys
119          300          305          310
121 acc ttc aaa gag atc atc tct tcc tat ccc ctg gga ggc ctt tgt gac 1374
122 Thr Phe Lys Glu Ile Ile Ser Ser Tyr Pro Leu Gly Gly Leu Cys Asp
123          315          320          325
125 ttg tct agc aga tat taaatgggga cagagcacgc aatataggaa catccataag 1429
126 Leu Ser Ser Arg Tyr
127      330
129 agactttttc actcttacc tacctgaata ttctacttct gcaacagctt tctcttccgt 1489
131 gtaggggtact gggtgagata tccattgtgt aaatttaagc ctatgatttt taatgagaaa 1549

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PATENT APPLICATION: US/10/074,754

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Input Set : A:\96886-L.seq.txt

Output Set: N:\CRF4\10022002\J074754.raw

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133 aaatgccag tctctgtatt atttccaatc tcatgtact tttttggcca taaaatatga 1609
135 atctatgtta taggtttag gcactgtgga tttaaaaaa gaaaagtcct tattaaaaa 1669
137 tt 1671
140 <210> SEQ ID NO: 2
141 <211> LENGTH: 332
142 <212> TYPE: PRT
143 <213> ORGANISM: Homo sapiens
145 <400> SEQUENCE: 2
146 Met Val Asn Ser Thr His Arg Gly Met His Thr Ser Leu His Leu Trp
147 1 5 10 15
149 Asn Arg Ser Ser Tyr Arg Leu His Ser Asn Ala Ser Glu Ser Leu Gly
150 20 25 30
152 Lys Gly Tyr Ser Asp Gly Gly Cys Tyr Ala Gln Leu Phe Val Ser Pro
153 35 40 45
155 Glu Val Phe Val Thr Leu Gly Val Ile Ser Leu Leu Glu Asn Ile Leu
156 50 55 60
158 Glu Ile Val Ala Ile Ala Lys Asn Lys Asn Leu His Ser Pro Met Tyr
159 65 70 75 80
161 Phe Phe Ile Cys Ser Leu Ala Val Ala Asp Met Leu Val Ser Val Ser
162 85 90 95
164 Asn Gly Ser Glu Thr Ile Ile Ile Thr Leu Leu Asn Arg Thr Asp Thr
165 100 105 110
167 Asp Ala Gln Ser Phe Thr Val Asn Ile Asp Asn Val Ile Asp Ser Val
168 115 120 125
170 Ile Cys Ser Ser Leu Leu Ala Ser Ile Cys Ser Leu Leu Ser Ile Ala
171 130 135 140
173 Val Asp Arg Tyr Phe Thr Ile Phe Tyr Ala Leu Gln Tyr His Asn Ile
174 145 150 155 160
176 Met Thr Val Lys Arg Val Gly Ile Ser Ile Ser Cys Ile Trp Ala Ala
177 165 170 175
179 Cys Thr Val Ser Gly Ile Leu Phe Ile Ile Tyr Ser Asp Ser Ser Ala
180 180 185 190
182 Val Ile Ile Cys Leu Ile Thr Met Phe Phe Thr Met Leu Ala Leu Met
183 195 200 205
185 Ala Ser Leu Tyr Val His Leu Phe Leu Met Ala Arg Leu His Ile Lys
186 210 215 220
188 Arg Ile Ala Val Leu Pro Gly Thr Gly Ala Ile Arg Gln Gly Ala Asn
189 225 230 235 240
191 Met Lys Gly Ala Ile Thr Leu Thr Ile Leu Ile Gly Val Phe Val Val
192 245 250 255
194 Cys Trp Ala Pro Phe Phe Leu His Leu Ile Phe Tyr Ile Ser Cys Pro
195 260 265 270
197 Gln Asn Pro Tyr Cys Val Cys Phe Met Ser His Phe Asn Leu Tyr Leu
198 275 280 285
200 Ile Leu Ile Met Cys Asn Ser Ile Ile Asp Pro Leu Ile Tyr Ala Leu
201 290 295 300
203 Arg Ser Gln Glu Leu Arg Lys Thr Phe Lys Glu Ile Ile Ser Ser Tyr
204 305 310 315 320
206 Pro Leu Gly Gly Leu Cys Asp Leu Ser Ser Arg Tyr

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RAW SEQUENCE LISTING

DATE: 10/02/2002

PATENT APPLICATION: US/10/074,754

TIME: 09:45:54

Input Set : A:\96886-L.seq.txt

Output Set: N:\CRF4\10022002\J074754.raw

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207          325          330
210 <210> SEQ ID NO: 3
211 <211> LENGTH: 35
212 <212> TYPE: DNA
213 <213> ORGANISM: Artificial Sequence
215 <220> FEATURE:
216 <223> OTHER INFORMATION: Description of Artificial Sequence: degenerate
217     oligonucleotide primer
219 <220> FEATURE:
220 <221> NAME/KEY: misc_feature
221 <222> LOCATION: (23)..(24)
222 <223> OTHER INFORMATION: "n" is inosine
224 <400> SEQUENCE: 3
OK-> 225 gagtcgacct gtgygysaty rcnntkgacm gstac          35
228 <210> SEQ ID NO: 4
229 <211> LENGTH: 32
230 <212> TYPE: DNA
231 <213> ORGANISM: Artificial Sequence
233 <220> FEATURE:
234 <223> OTHER INFORMATION: Description of Artificial Sequence: degenerate
235     oligonucleotide primer
237 <220> FEATURE:
238 <221> NAME/KEY: misc_feature
239 <222> LOCATION: (18)
240 <223> OTHER INFORMATION: "n" is inosine
242 <400> SEQUENCE: 4
OK-> 243 cagaattcag wagggcanc agcagasryg aa          32
246 <210> SEQ ID NO: 5
247 <211> LENGTH: 7
248 <212> TYPE: PRT
249 <213> ORGANISM: Artificial Sequence
251 <220> FEATURE:
252 <221> NAME/KEY: SITE
253 <222> LOCATION: (1)
254 <223> OTHER INFORMATION: "Xaa" is norleucine
256 <220> FEATURE:
257 <221> NAME/KEY: SITE
258 <222> LOCATION: (4)
259 <223> OTHER INFORMATION: "Xaa" is naphthyl-D-alanine
261 <220> FEATURE:
262 <223> OTHER INFORMATION: Description of Artificial Sequence: peptide
263     cyclized between the epsilon amino group of the
264     lysine and the sidechain carboxyl group of the
265     aspartic acid
267 <400> SEQUENCE: 5
WE-> 268 Xaa Asp His Xaa Arg Trp Lys
269     1          .          5
272 <210> SEQ ID NO: 6
273 <211> LENGTH: 30

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RAW SEQUENCE LISTING DATE: 10/02/2002
 PATENT APPLICATION: US/10/074,754 TIME: 09:45:54

Input Set : A:\96886-L.seq.txt
 Output Set: N:\CRF4\10022002\J074754.raw

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274 <212> TYPE: DNA
275 <213> ORGANISM: Artificial Sequence
277 <220> FEATURE:
278 <223> OTHER INFORMATION: Description of Artificial Sequence: degenerate
279     oligonucleotide primer
281 <400> SEQUENCE: 6
282 gaattcgacg tcacagtatg acggccatgg                      30
285 <210> SEQ ID NO: 7
286 <211> LENGTH: 48
287 <212> TYPE: DNA
288 <213> ORGANISM: Artificial Sequence
290 <220> FEATURE:
291 <223> OTHER INFORMATION: Description of Artificial Sequence:
292     oligonucleotide primer
294 <400> SEQUENCE: 7
295 aattagcgcc cgcagtatgc aaaaaaaagc ccgctcatta ggcgggct      48
298 <210> SEQ ID NO: 8
299 <211> LENGTH: 48
300 <212> TYPE: DNA
301 <213> ORGANISM: Artificial Sequence
303 <220> FEATURE:
304 <223> OTHER INFORMATION: Description of Artificial Sequence:
305     oligonucleotide primer
307 <400> SEQUENCE: 8
308 ccgaagcccg cctaattgagc gggctttttt ttgcatactg cggccgct      48
311 <210> SEQ ID NO: 9
312 <211> LENGTH: 72
313 <212> TYPE: DNA
314 <213> ORGANISM: Artificial Sequence
316 <220> FEATURE:
317 <223> OTHER INFORMATION: Description of Artificial Sequence:
318     oligonucleotide primer
320 <400> SEQUENCE: 9
321 ggccggcatg catcaagctt atctcgagat cgtcgactac catggtacat cgatcaggta 60
323 ccatcccggg gc                                           72
326 <210> SEQ ID NO: 10
327 <211> LENGTH: 72
328 <212> TYPE: DNA
329 <213> ORGANISM: Artificial Sequence
331 <220> FEATURE:
332 <223> OTHER INFORMATION: Description of Artificial Sequence:
333     oligonucleotide primer
335 <400> SEQUENCE: 10
336 ggccgccccg ggatggtacc tgatcgatgt accatggtag tcgacgatct cgagataagc 60
338 ttgatgcatg cc                                           72

```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/074,754

DATE: 10/02/2002
TIME: 09:45:55

Input Set : A:\96886-L.seq.txt
Output Set: N:\CRF4\10022002\J074754.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:3; N Pos. 23,24
Seq#:4; N Pos. 18
Seq#:5; Xaa Pos. 1,4

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23
Seq#:1; Line(s) 24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43
Seq#:1; Line(s) 44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63
Seq#:1; Line(s) 64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83
Seq#:1; Line(s) 84,85,86,87,88,89,90,91,92,93,94,95,96,97,98,99,100,101,102
Seq#:1; Line(s) 103,104,105,106,107,108,109,110,111,112,113,114,115,116,117
Seq#:1; Line(s) 118,119,120,121,122,123,124,125,126,127,128,129,130,131,132
Seq#:1; Line(s) 133,134,135,136,137,138,139,140
Seq#:2; Line(s) 141,142,143,144,145,146,147,148,149,150,151,152,153,154,155
Seq#:2; Line(s) 156,157,158,159,160,161,162,163,164,165,166,167,168,169,170
Seq#:2; Line(s) 171,172,173,174,175,176,177,178,179,180,181,182,183,184,185
Seq#:2; Line(s) 186,187,188,189,190,191,192,193,194,195,196,197,198,199,200
Seq#:2; Line(s) 201,202,203,204,205,206,207,208,209,210
Seq#:3; Line(s) 211,212,213,214,215,216,217,218,219,220,221,222,223,224,225
Seq#:3; Line(s) 226,227,228
Seq#:4; Line(s) 229,230,231,232,233,234,235,236,237,238,239,240,241,242,243
Seq#:4; Line(s) 244,245,246
Seq#:5; Line(s) 247,248,249,250,251,252,253,254,255,256,257,258,259,260,261
Seq#:5; Line(s) 262,263,264,265,266,267,268,269,270,271,272
Seq#:6; Line(s) 273,274,275,276,277,278,279,280,281,282,283,284,285
Seq#:7; Line(s) 286,287,288,289,290,291,292,293,294,295,296,297,298
Seq#:8; Line(s) 299,300,301,302,303,304,305,306,307,308,309,310,311
Seq#:9; Line(s) 312,313,314,315,316,317,318,319,320,321,322,323,324,325,326
Seq#:10; Line(s) 327,328,329,330,331,332,333,334,335,336,337